THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XVII MUSKOGEE, OKLA., AUGUST, 1924 NUMBER 8

SYMPOSIUM ON PELVIC CANCER*

SIGNS AND SYMPTOMS OF CANCER OF THE UTERUS PRECEDING OR FOLLOWING DEVELOPMENT

J. S. HARTFORD, M.D.
OKLAHOMA CITY

The recent educational campaign concerning cancer has fallen far short of its expected result, especially in uterine cancer. A close review of cases, coming into University Hospital during the last two years, shows first, that, the laity fail to appreciate or understand the early signs and symptoms of cancer; and second, that the physicians, themselves do not recognize this condition until patients are beyond the stage of successful treatment.

There has come into the gynecological clinic of University Hospital, during the last two years case after case of inoperable, untreatable, cancer of the uterus that has been unrecognized by the family physicina though under his observation for a period of from three months to one year. We have attempted palliative treatment in some of these cases, but many of them have been returned to their homes without treatment and without hope.

In the study of this series of cases we have tried by close questioning, to elicit a reason for this state of affairs and we find the following answers stand out most prominently.

First: The almost universal belief, that near or during the period of menopause that it is usual, and of no significance for a woman to bleed irregularly, intermittently or profusely: Consequently, they do not consult their family physician or if they do consult him do not permit a thorough examination. This neglect is directly traceable to the woman herself, and her negligence results in her failing to receive proper attention during the best period for successful treatment.

Second: Fear is a factor, causing many women not to apply for treatment. They know that if they have cancer, they must be treated, and that this operation or treatment is a serious one, depriving them of their organs or bringing about certain changes which every woman is anxious to avoid.

Third: In many instances those cases that apply to the physician are not recognized by him as malignancies, or potential malignancies, but usually treated as simple hemorrhagic endometritis, as hyperactivities of the ovaries or endocervicitis.

I find the type of cancer beginning at the vaginal and cervical margin are most often recognized, while the adenoma carcinoma beginning in the cervical canal or fundus are not recognized until late.

The first causes must be remedied by knowledge gained through the lay press, through the women's club, and from personal contact through the more intelligent women.

The second may be counteracted by giving out the knowledge that the best results are obtained by early treatment, and that the less severe the case the lower the mortality, and last that the ill effects of the operation or treatment are overdrawn, as it comes at the time near the change of life when nervous and physical changes may come regardless of treatment. We have been surprised many times how difficult it is to persuade some women to submit to surgery when it may be their only help.

As to the third cause, the failure of the physician to recognize the early signs and symptoms of cancer. I cannot understand this, as I believe there is no physician of good standing but who knows, and could recognize these symptoms if they were not neglectful in their study and examination of each individual case. I am certain the blame with the physician must be placed to neglect, and carelessness in examination, rather than the lack of knowledge of signs and symptoms.

This is well illustrated in a case brought to my clinic last summer, in which the following conversation took place: "Mother, what was the first sign you had of trouble?" "I had a vaginal discharge that was not common to me." "When did you consult a physician?"

* Read before Section on Radiology, Genito-Urinary Diseases and Dermatology, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May 13, 14, 15, 1924.

"Right away." "What kind of treatment did he give you?" "He gave me some medicine to take." "How long after you consulted the physician before you was examined?" "Six months." "What did the doctor tell you was wrong with you, when he examined you?" "He said I had inoperable cancer of the womb." This is a typical history that we get from many women; showing neglect of examination rather than lack of knowledge on the part of the physician.

This paper is being read for the express purpose of emphasizing the importance of early signs and symptoms of cancer of the uterus, that usually show up, just preceding or following forty years of age and the absolute necessity of making a digital, instrumental and general examination.

The early signs of uterine cancer are so plain that we cannot help but recognize them. The vaginal discharge, watery, thin, not pus, not blood, which is not common to the patient. The marked, scarred or lacerated cervix with thickened and everted edges: the elongated, thickened, hypertrophied cervix not the seat of active inflammation, the blood oozing of the canal from the touch of the applicator.

The hypertrophied uterus when atrophy should be taking place. The thickened endometrium. The spotting of blood following examination, during intercourse or following a vaginal douche. This drop of blood may appear between menstrual periods independent of any irritation, later there may be an increase in the number of days of flow and the amount of flow, with irregular clearing up of flow accompanied by thick muco purulent discharge. These are the early signs and symptoms, and let me stress the point that there is no pain. This is a condition that women cannot understand, they claim, continually and persistently, that they cannot have signs of cancer without pain. They should be taught by any one having anything to do with the subject that pain is only present in later or last stages of the disease.

In older women who have successfully passed through the change of life, one, two, three or more years, and then return to a bloody flow are almost always malignancies and should be considered so, until proven otherwise.

Our suspicions should be aroused and a careful examination should be given when young women who have not passed the change of life, and have had normal menstruation and clean genitalia, suddenly notice a vaginal discharge, increased and irregular menstrual periods without pain, without infection, inflammation or history of abortion.

This brings us to the laboratory examinations and reports. With our desire to be fair to our patients and honest with ourselves, we have taught them, though they have all the above signs and symptoms that they must not be submitted to radium, x-ray or surgical treatment until the pathologist has passed upon a small portion of tissue taken from one angle of a cervix or a macerated portion of the endometrium, that is brought out by the curette. If no cancer cells are found we throw up our hands and wait until the pathologist says it is there, or until we can see it withour own eyes—then we try with all our energy and enthusiasm, radium, x-ray and surgery. Read the statistics, it is recorded that one woman in every eight to twelve, dies of cancer.

The skin men are the ones who have made the greatest progress in the treatment of cancer, and did you ever know one who was particularly enthusiastic about pathological reports? They may have reached a great truth that the time to deal with cancer is before it is cancer.

I believe in pathologists, I use them, but I do not believe when a woman of forty years of age or older, presents all the signs and symptoms of cancer of the uterus, as brought out by an accurate history, a careful general physical and local examination, that we should throw these things all aside and not treat her, just because a pathologist is not able to demonstrate in a small piece of tissue, cancer cells.

I have been asking and hoping that the pathologist will be able to find, and demonstrate a precancer stage in tissue, then they will be a great help in the cure of uterine conditions that lead up to cancer.

Until our knowledge, of the origin of malignant growths, demonstrates and proves that they do not originate at some local point and remain in a local point, for some time, we must insist on applying treatment to this point before, or immediately after, the origin of the disease.

I maintain that a pathological report on cancer of the cervix is of no value unless it is positive, and that in many cases it is not found until the growth is well advanced. A negative report of cervical tissue oftentimes seals the fate of a patient by giving them false confidence of non-malignancy. The pathological diagnosis of malignancy of fundus is more hopeful, as the disease can be successfully treated at a later date following

development, by surgery and deep x-ray therapy.

I believe the surgeon is not fair with the pathologist in cancer of the cervix, as he requests a diagnosis from a small piece of tissue, that pathologically speaking, may be far from the foci of malignancy.

In cancer of the cervix, if the patient be in the hands of a careful, well trained and conscientious surgeon, I believe preference over the pathologist's report should be given to the history, symptoms and physical findings.

It seems to me good practice to treat cases over forty years of age, that have chronic endocervititis, lacerations of cervix with erosions, ulcerations, elongation and hypertrophies, with foul or tenacious discharge, pathological or unusual bleedings of the uterus, fibroids and uterine polyps, in a curative way having in mind at all times the possibility of malignant development.

PELVIC CANCER EXCLUSIVE OF CANCER OF THE FEMALE ORGANS

LE ROY LONG, M.D.
OKLAHOMA CITY

CANCER OF THE RECTUM.

For many years it has been understood that cancer of the rectum constituted about three-fourths of all cancers of the intestinal tract. Abbe, quoted by DaCosta, says that rectal carcinomata constitutes three-fourths of all intestinal tumors. In speaking of pelvic cancer, therefore, one must, after excluding the female organs, think particularly of cancer of the rectum.

Notwithstanding its prevalence, there are many evidences that cancer of the rectum is overlooked with extreme and disastrous frequency. There is probably no other approachable area of the human body that is so uniformly neglected in the examination of patients as the rectum. The result is that rectal cancer is usually identified only after it has become an extremely formidable process.

In considering the danger signals that should call attention to the possibility of cancer of the rectum, one should remember that suspicious symptoms acquire relatively greater importance about the age of forty and thereafter; it being remembered that the disease may occur occasionally much earlier in life, there being cases reported as young as fourteen years. These are extremely exceptional, however, for most of the cases are found in patients around and after the age of forty.

One of the unfortunate things in connection with this disease is the tardy appearance of symptoms. This makes it all the more important to examine the rectum in the case of every patient who presents even slightly suspicious evidences of abnormality.

In the beginning, pain and other striking symptoms are not present in the usual case. The first symptoms depend upon an interference with function. In the developmental period there is infiltration and stiffening of the rectal walls, and as a result there is an interference with the normal and uniform expulsion of material. That is to say, there is irregularity of rectal function, such irregularity being characterized by constipation or diarrhea, and frequently by the expulsion of minimal amounts of material involuntarily, the involuntary escape of gas being often associated phenomenon.

These are some of the early danger signals which from a diagnostic point of view emphasize not only the necessity of an examination of the rectum but the necessity, also, of meticulous care in securing the history.

As the disease advances, there is ulceration and narrowing of the lumen, and then there may be blood in the irregular dejecta. Even in this stage it must be confessed that lightly and carelessly attributing the bloody dejecta to hemorrhoids is not an uncommon occurrence. This is frequently the conception that the patient has of his trouble, and the frequency with which the physician coincides with the preconceived notion of the patient emphasizes the necessity for more intelligent and painstaking procedure.

After cancer of the rectum has progressed to the stage when there is marked encroachment upon the lumen, extensive destruction of tissue, and the passage of not only blood but offensive debris, accompanied often by pain, tenesmus and ribbon stools, it is a late day to make an investigation of the condition.

Remembering then, the frequency of cancer of the rectum, the tardy appearance of symptoms, and the necessity of making an early diagnosis, let me urge more careful investigation in the presence of suspicious symptoms, be they ever so slight.

CANCER OF THE PROSTATE.

Unfortunately, cancer of the prostate does not present any early subjective symptom that is not present in benign hypertrophy of

the gland. I am now speaking particularly of carcinoma of the prostate. When, therefore, the patient complains of nocturnal thamuria, especially if he is after forty years of age, the condition of the gland should be determined by rectal palpation. It is not always possible even then to be able to say whether or not the prostate is the site of a malignancy, but if woody hardness is present it should be considered a very highly suggestive condition. Irregularity of conformation emphasizes the suspicion, but it should be remembered, however, that woody hardness, even with a perfectly uniform conformation, usually points to malignancy, for while an irregular and nodular surface is frequently associated with a malignancy, the absence of such irregularity is not necessarily evidence that malignancy does not exist.

In carcinoma of the prostate, if the patient is to be permanently benefitted, the diagnosis must be made early in order that an early, radical operation may be performed. The drainage from the prostate is largely into the internal iliac lymph nodes, and if a diagnosis is not made before typical symptoms of advanced carcinoma are present, no procedure can be of service because there has already been a more or less extensive distribution of cancer cells.

It should not be forgotten that sarcomata may develop in and about the prostate gland. In unison with the history of the development of sarcomata generally, age is relatively an unimportant factor.

It has been pointed out that sarcoma usually involves the upper and posterior parts of the gland, and for that reason urinary disturbances are frequently absent in the early part of its development. The following case is fairly typical:

Mr. T., a white man, traveling insurance agent, age fifty, married, negative venereal history, entered University Hospital on the 31st day of March, 1924, on account of pain about the sacral region, perineum and lower abdomen, associated with some difficulty in emptying the bladder. He stated that he had been well until about six weeks before, when the above symptoms became manifest, and had rapidly increased in severity. His wife stated, however, that she had observed that he did not seem to be altogether well for two or three months. Within six weeks he had lost forty pounds in weight.

There was a firm, ovoid, symmetrical, smooth mass springing up from behind the symphysis pubis extending half way to the umbilicus. It occupied the mid portion of the lower abdomen, shading off to either side. The transverse diameter was about five inches.

Rectal palpation revealed a very firm, smooth mass just above the sphincter, and bulging backwards into the rectum, pressing the latter against the posterior pelvic wall. The mass extended laterally on both sides, so far that the limits could not be reached with the palpating finger. It rounded upwards behind, and this surface presented irregular areas which seemed to be divided by ridges running in a vertical direction.

Notwithstanding the presence of such an enormous tumor completely encircling the base of the bladder and posterior urethra, the patient was able to retain urine for six or eight hours, and was able to void while in hospital, the act being accompanied by some pain and tenesmus. It was observed that when he was given morphine he ate and slept well, and voided without any considerable difficulty.

Dr. C. B. Taylor was kind enough to see this patient with me, but it was decided to not undertake a cystoscopic examination on account of the danger of injuring the urethra, which apparently traversed the neoplasm for a long distance.

The diagnosis was inoperable sarcoma, and he was advised to have deep x-ray therapy, which was administered under the direction of Dr. Roland. According to a message received from the patient, he has increased in weight and feels better. He has not been seen since he left the hospital on April 10th, and I am unabl to describe the present condition of the neoplasm.

CANCER OF THE BLADDER.

I wish to say only a few words about cancer of the bladder, and to point out the necessity of early instrumental examination when there is interference with function, or when there are abnormal urinary findings that cannot be otherwise reasonably explained.

On account of the technical difficulties, a cystoscopic examination is not easily performed by every physician or surgeon, and there may be a temptation to defer securing accurate information on that account. However, when suspicious symptoms are present, and particularly in the presence of an unexplained hematuria, to defer securing such an examination is simply putting off the evil day, for the hour of disaster for that patient will inevitably come.

Malignant disease, especially sarcoma, may show itself in the connective tissue spaces in

and about the pelvis. The bony wall of the pelvis may be the site of a carcinoma due to metastasis from the intrapelvic organs or from some other more distant primary focus. In these cases there is usually interference with function, pain and distress, and when these symptoms are present it is highly important that the existence of cancer be borne in mind while seeking an explanation of the symptoms.

Discussion: DR. L. A. TURLEY, OKLAHOMA CITY.

Since one of the essayists has directly challenged the pathologists with regard to the accuracy and value of tissue work, and since all of the essayists have mentioned this same subject, I wish to way a few words concerning tissue examinations and their value.

There is no specialist in the medical field or in any other field that I know of, of whom there is more expected and with whom there is less cooperation than the pathologist. Would you think it would be possible for one to take a piece of Bologna sausage and tell whether it was made from dog, beef, or pork? Yet such is expected of the pathologist. Would any of you take a fragment of fried meat and by looking at it or even tasting it tell whether it was squirrel, rabbit or cat? Yet such is expected of the pathologist. Could you by merely hearing the footfall in the hallway tell the age, sex and clinical condition of the individual? Such things are expected of the pathologist. Material is sent in to the pathologist in any way, in any type, or kind of solution that happens to be at hand, or in no solution at all. I have received specimens sent in lysol, carbolic acid, perfume, and corn whiskey, and some of them in no solution whatever, simply a piece of dry tissue on a piece of gauze, and yet the individual sending in these specimens expects a report on the basis of which he could determine whether or not a radical operation was necessary. Specimens are sent in without a word as to the organ or sex of the individual from which it is taken, and without a particle of clinical history or anything else to guide the pathologist in even identifying the part of the body from which the section was taken, and the individual sending in this section probably not receiving a satisfactory report would condemn pathologists and tissue work. Of course the pathologist may be able to identify the tissue if the person taking the specimen had accidentally got enough normal tissue or the pathological processes were not so extensive as to destroy normal structures, but this is a pure gamble.

One of the essayists said that sections of tissue for examination should be taken with a cautery. Why is the cautery used at all? It is because it burns and cooks the tissue, and any tissue so removed unless it be large enough to be beyond the range of the effect of the heat of the cautery will be practically destroyed so far as tissue examination is concerned, because the heat has destroyed the morphology and staining reaction of the cells. So let me warn you not to expect accurate diagnoses from small section removed by a cautery. The effect of trauma in causing metastasis depends not so much on the trauma itself as the type of trauma. The effect of massage in causing metastasis has already been mentioned, and the reason why such trauma induces metastasis is too plain for it to be necessary for me to take your time to explain it to you. The type of trauma which aids metastasis is manipulating, squeezing or bruising trauma. There is little or no evidence that the trauma of a clean incision with a sharp instrument will cause metastasis, so that you need not fear metastasis in taking specimens in this manner. Cauterize the wound afterwards if you want to make assurance doubly sure, but as I said before if you want an accurate tissue report do not take specimens with a cautery unless you take a large block, and even then you run the risk of destroying the very part which gives the keynote to the cause of the lesion. Another thing which often happens, even in hospitals, is that a surgeon casually remarks that he would like a tissue report on the material removed at operation and dismisses it with that until he asks for the examination. The important matter of getting this tissue in the best possible condition to the pathologist is left to the interest and industry of the nurse or maid who cleans the operating room, so that tissues are left some times for hours perhaps in the sunshine or in an open window with the air blowing across them before, as the last thing before leaving the operating room, the nurse takes the specimen to the laboratory. What accuracy of diagnosis can you expect from a piece of mummy? So that if you will consider the facts and factors surrounding tissue examinations you will find that the largest part of the unsatisfactory nature of tissue examinations is due to lack of cooperation on the part of the individual taking the specimen and in the meagerness of facts furnished the pathologist on which he has to base his opinion, or at least assist in the formation of his opinion.

Trained pathologists can tell you as exactly and minutely the condition of a piece of

tissue as one of you could tell the sex and race of an individual on whom you were performing a physical examination if he has the same opportunity. A negative pathological report does not mean that the patient does not have carcinoma for example, because the pathologist has no instrument with the vaunted delineating powers of an Abram's Electrometer, but it means that there is no carcinoma in the specimen furnished him, and if the surgeon is not satisfied with such a report, before he condemns the pathologist he should question whether or not he himself took the specimen from such a part of the lesion as would show its character. In such circumstances I have frequently asked the surgeon for a new specimen of tissue, frankly telling him that it did not appeal to me that the specimen furnished represented fairly the true condition. Furnish the pathologist with the information as to the organ from which the section is taken, with a bit of clinical history, giving the salient points; select your specimens carefully from such a part of the lesion as will show to the best advantage its true character; get it into his hand as soon as possible in the best condition possible. If there must be delay of hours or days, put it in 10 per cent formalin or 4 per cent formaldehyd. In other words, give him the same cooperation and opportunity to get fair data as you would ask for yourself in making a diagnosis, and you will be surprised at the increase in value, accuracy, and satisfactoriness of tissue reports. The ideal specimen for the pathologist should be from the periphery of the active part of the lesion including, if possible, some of the normal or more normal tissue and as much as possible the abnormal. Operating room personnel in hospitals should be instructed to see to it that the material of which tissue examinations were to be made should be gotten to the pathologist's hands as quickly as possible, within a few minutes after it is removed from the body, and not left for hours in the operating room as they usually are. In other words, cooperate with your pathologist, and he will render valuable service, and further let me state what has been stated by some of the essayists that a pathological report is not the sum total, but merely one factor in making a diagnosis. Surgeons are wont to rely too exclusively on pathology reports. And finally, the pathologist is a highly trained specialist. He is a consultant in your case and is entitled to all the consideration, rights, privileges and immunities of any other consultant.

SURGICAL TREATMENT OF CANCER OF THE UTERUS

L. M. Sackett, M.D.
OKLAHOMA CITY

The purpose of this article is not to describe in detail any special technique for the removal of a cancerous uterus; but rather to commend surgery for the results it has accomplished up to the present time.

In the year 1918, 11,967 women died of this murderous disease. Since that date it has been on the increase. I know you do tire of hearing and reading so much about this old subject. Perhaps you don't realize though, that some authorities state one woman in every twenty falls a victim to cancer. Therefore, we must work more diligently in the future to protect the lives of our womanhood. This is why I am making no apology for reading this symposium to you.

The results of surgery depend on two things: first an early diagnosis, second, an extensive operation and radical I say, well and thoroughly done.

There are just two classes of cancerous uteri—operable and inoperable. May the time come when we will have just the one—operable. I mean that through publicity, education, propaganda and observation, both by doctor and layman, we can get these cases so early that complete cures can be made, by operating.

By a greater and better development in diagnosis and abdominal surgery, Grave's operable cases have risen from 10-15 per cent to 50 per cent; Wertheim's to 61 per cent; Bumm's to 90 per cent. Therefore you will see that it *can be done.*

As soon as the diagnosis of cancer is made —operate. It is here that your attention should be called to the fact that cancer of the body is not as dangerous as that of the cervix. The operation does not need to be nearly as extensive as in the cervical type—about 80 per cent get well. It is not so necessary to remove so much parametrial structure, nor such a large cuff from the vagina.

Regarding treatment of cervical cancer, a thorough examination is to be made. If there is any doubt whatever procure a good specimen for a parafin section. If it is clinically evident, proceed at once. Some prefer to first curette away all loose friable tissue from the cervix. Others cauterize or remove a large cone shaped piece from the cervix—this is Freeman's plan. Again there are those who prefer to apply radium and five days

after go into the abdomen. Personally I like the plan of thoroughly cauterizing and proceed at once.

We are now on the brink—is it operable or inoperable, even after we have seen. Here let me remark as a preoperative point in diagnosis, that in the well advanced and dangerous type the uterus is more or less fixed as a result of the inflammatory tissues surrounding. An exploratory is advised if you are unable to decide.

After a careful survey of the pelvis—we must decide what style operation to do. Right here is the reason surgery is not universally recommended—why our cases have cancer return—just because we did not operate thoroughly. That is why Kroenig, Wertheim and many others have their wonderful results and records. *We* do not go far enough in *our* work. Can't you imagine the folly of removing a cancerous uterus the same as you do a hysterectomy for any other condition—and yet that is just what many are doing today. This is why their cases die in two years or before and never get as far as the five year period.

Reis certifies that he has some cases that are alive and well twenty-one and twenty-two years after he operated. He defies radium and x-ray to surpass that.

The technique of the Japanese Takayama is most wonderful and interesting and his statistics delightful. Some brilliant operators prefer the use of the cautery thruout. It most certainly has some advantages, but what I can't understand is how you can drive so far and safely into the tissues and know that all cancerous material has been removed. How can the ureters be separated from the posterior broad ligament peritoneum and all gland tissue removed—the dissection carried far up the blood vessels, etc? Isn't the sloughing which naturally follows an important consideration, when extensive work is being done. Isn't the knife, scissors or blunt dissection safer?

Schauta who devised a vaginal hysterectomy for carcinoma falls short of the records of Wertheim. In the case where lymph glands are palpably enlarged we must be radical. It was Wertheim who originated the plan of wide excision and it was universally taken up. He advised removing tissue far out in the parametrial structures, removal of all glands found, tying blood vessels far back, severing the round ligaments quite remote from the uterus, a large part of the vagina taken away, closing with or without vaginal drain.

Now when surgery is done like that we will most certainly have better results. We will not have to accept radium and x-ray as superior. However, they may yet develop more help to us. As yet they have not had the time nor experiences to demonstrate any superiority over surgery. When they can produce a 42.3 per cent record, for instance, as from Bonney's report that out of 100 cases operated, 40 have lived 5 and more years free from recurrence. Cobb reported in 1920 a series of 35 cases of radical hysterectomies with a 57 per cent five year cures.

Please understand that I do not think that radium and x-ray have no place in the treatment. It is most valuable as a follow up measures. Certainly every case should have deep rays applied following her operation and continued for some time. Radium is more advantageous in the early type of cancer—not in the deep involvements. There is too much uncertainty—difficult to regulate the dose, time and frequency.

Reis believes in surgery. Radium and x-ray records are too inadequate at the present time. They do not compare well with surgery. When they equal the work of Wertheim, Kroenig and the French, then it will be time to consider which is the better treatment.

There is one very important consideration when doing our pelvic work in cancer. That is the disposition of the ovaries. Leave them in or take them out—which? If we can and will forget the sentimental side and think only of the patient's life alone we will be rendering her a much greater service. Owing to the ease with which metastases occurs in this organ there is grave danger in permitting them to remain. Macroscopically they may appear normal, but in reality budding with cancer cells. Consequently with future danger in view, I believe it is good surgery to remove them along with the tubes.

Nothing particularly new has recently been added to the surgical technique in treating carcinoma of the uterus. This is only a plea for incipient recognition and prompt and radical surgical treatment. With the pendulum still swinging between the two styles of treatment—but with the lowest mortality, the longer lives given by the work of surgery, I am asking you to seriously consider your future choice of treatment in cancer of the uterus.

RADIUM TREATMENT OF CANCER OF THE CERVIX

CLYDE O. DONALDSON, M.D.
Roentgenologist to the Alfred Benjamin Dispensary
and
GEORGE E. KNAPPENBERGER, M.D.
Instructor in Radiology, University of Kansas School of Medicine
KANSAS CITY, MO.

The value of any therapy is determined after a careful study of the end results. In cancer of the cervix uteri, owing to its tendency to recur or metastasize for many years after treatment, observations must be made over a period of years.

The term 'cure' in cancer has been arbitrarily set at five years and, while not entirely true, serves as a guide to compare the relative merits of different methods of treatment.

Experience has demonstrated two general methods of treatment to be of value—surgery and radiation. In the surgical methods should be included operation, electro-coagulation and cautery; in radiation should be included x-rays and radium.

In order to discuss the treatment of this disease from the standpoint of the best method of procedure, cases should be classified under the following heads

1—Early localized.
2—Borderline.
3—Advanced.

An early localized cancer of the cervix is one in which the disease is limited entirely to the cervix. If the vaginal mucosa or the perimetral structures above the vaginal vault are encroached upon to the slightest extent, the disease is no longer localized. The old terminology describes such a lesion as "operable" and this term is still proper in the sense that such cases are in the operable class, but the term "early localized" is preferable as it permits more liberal interpretation of proper therapy.

Borderline cases will include those in which the disease encroaches slightly upon the vaginal mucosa or where there is a suggestion of involvement of the perimetral structures higher up.

Advanced cases are those in which the disease frankly involves either the vaginal mucosa or the perimetral structures.

It is a safe rule that cancer of the cervix is amenable to operative treatment if a simple hysterectomy will suffice to remove all of the growth. The wide pan-hysterectomy, popularized by Wertheim, has not proven successful because of the high primary mortality and the small percentage of cases (35 per cent) suitable for operative treatment.

Operation, if confined to the first class, the "early localized" or "operable," results in five year "cures" in a goodly number of cases. The statistics compiled by the late Dr. Henry H. Janeway (1) show a wide range of end results, cures ranging from ten to sixty percent of the total number operated upon.

Equally good, if not better, results have been obtained by radiation alone, but most surgeons and radiologists are unwilling to give up operation in properly selected cases. In the light of present evidence either procedure is justifiable, but it is thought that a combination of radium and operation will produce more cures than either procedure alone. This view is held by Dr. Howard Kelly and the Memorial Hospital.

In many borderline or advanced cases, a combination of electro-coagulation or cautery followed by radium will eradicate the local lesion more quickly than radium treatment alone. This method requires an anesthetic however, and it is questionable if the end result is any better than when radium alone is used.

The results of operation in the borderline and advanced groups have been so disappointing that it has been practically abandoned in favor of radiation.

The published figures of Janeway (1), Duncan (2), Bailey & Healey (3), Schmitz (4), Doederlein (5), Opitz (6), Clark & Keene (7), Von Seuffert (8), Paris Radium Institute (9) furnish a comprehensive survey of the possibilities and limitations of radium treatment in this disease.

The early localized group shows five year "cures" in twenty to fifty percent; the borderline group fifteen to twenty-five percent and the most advanced group five to fifteen per cent. All cases, except the most advanced or cachectic, are suitable for treatment either curative or palliative.

Figures are very unreliable, owing to the personal factor of the skill of the operator, differences in pathological reports, methods of classification, etc., but at least radium statistics are as reliable as surgical statistics. The accumulated evidence points to the fact that cancer of the cervix should always be treated by radiation except in the early localized case, where either treatment yields equally good results. Surgeons may take exception to this statement on the ground that no treatment is good treatment which does

not yield material for pathological study. This is a reasonable point and worthy of discussion. Surgical treatment permits of careful study of the entire tissue, yet it will be admitted that very few physicians are capable of properly interpreting microscopical tumor pathology. It is not intended to belittle the value of tissue study but the percentage of error, as it is done in the average hospital, is probably as great as in clinical observation alone. This is in no sense a reflection on the pathologist but indicates the difficulty of tissue diagnosis.

It is considered entirely proper to remove a section of tissue for microscopical study in every case where there is doubt of the diagnosis, whether the treatment is to be operative or radiative. This should be done very carefully, probably with the hot knife if surgery is contemplated, or at the time of treatment if radiation is the method of choice.

Tissue examination should do more than make the diagnosis of cancer; it should classify the tumor according to the degree of malignancy, based upon the cell type, fibrosis and hyalinization. These factors will aid greatly in making a prognosis.

Radiologists have been criticized for treating lesions of the cervix without making routine tissue examinations and an effort should be made to overcome this whenever there is the slightest doubt of the diagnosis. It is difficult to see where tissue section could be of value either in diagnosis or prognosis in advanced cases. It must not be forgotten that the interests of the patient are paramount to the interests of pure science and if no information of value can be gained by tissue section, such routine practice for the sole purpose of proving the diagnosis is probably taking unwarranted liberties with the patient.

It is not proven whether biopsy is a dangerous procedure or not, equally good authorities differ; but at least one can say that any unusual trauma to a malignant tumor is potentially dangerous. Ochsner (10) says that biopsy should be resorted to only when the diagnosis is in doubt. The question of trauma has been investigated experimentally in animals by Knox (11) who shows that very gentle massage of breast tumors in mice for a total of two to five minutes has been shown to set free numerous particles of tumor which form emboli in the lungs. Her conclusion is that, while this has not been proven in man, the importance of avoiding diagnosite or operative manipulation in man is obvious. Sistrunk and McCarty (12) state that no ill effects have been noted in removing sections from breast tumors for diagnosis.

In this connection it is well to consider the proper method of examination of cancer of the cervix. Very frequently it happens that a patient is examined by three or four doctors before being referred for radium treatment. The family physician makes the first examination and possibly being in doubt as to the diagnosis, or fearing to tell the patient the truth without consultation, refers her to another physician. As a rule she is next sent to the surgeon who makes another examination. If the condition is inoperable, the patient is then referred to the radiologist who necessarily has to go thru the same procedure. Oftimes the patient will go to several physicians of her own accord to substantiate the diagnosis before she is willing to undergo treatment. Such practice should be condemned because rough or frequent handling of the cancer may break down nature's protective wall in the same manner that massage or squeezing a furuncle spreads the infection.

The examination of women suspected of having cancer of the cervix should be done very carefully. First, a digital examination is made of the vaginal vault and the cervix. Second, the finger is inserted into the rectum and the pelvis explored as high up as possible. Third, the vaginal speculum is inserted and the parts carefully inspected. The knee-chest position is very practical as the cervix can usually be inspected to good advantage with no trauma.

If a lesion of the cervix is found, the outer limits of the disease is determined. If the lesion is entirely confined to the cervix, the examination may be stopped until such time as it is practical to remove a section for microscopical diagnosis. Cervical erosion is sometimes difficult to differentiate from cervical cancer. Bowing (13) states that in cancer the line of demarkation between the lesion and the normal tissue is very sharply defined whereas in cervical erosion the lesion gradually fades off into the normal tissues. Superficial capillaries are quite prominent in cancer, at the edge of the lesion. In a fungating growth the diagnosis is rarely in doubt.

If the lesion is one in which radium is indicated, the position, size and direction of the cervical canal are noted so that the proper applicator may be made up ready for insertion.

The treatment is conducted with as little "fuss" as possible. The lower bowel is emptied by enema, the bladder emptied and a sodium bicarbonate, vaginal douche given,

The patient is put in the position best suited to expose the lesion, either the knee-chest or the dorsal, and the radium applicator placed. It is desirable to insert the radium into the cervical canal but if this is productive of too much trauma, it may be packed against the cervix. The vaginal vault is then packed to push the bladder and rectum as far away from the radium as possible. During the treatment the bladder should be emptied at least every four hours; the horizontal position and the large vaginal pack will necessitate the use of the catheter in many cases.

The dosage may vary from 2000 to 5000 milligram hours, depending upon the extent of the lesion, the location and type of applicator and the size of the vagina. The radium should be well filtered thru at least one millimeter of copper, silver, or lead, plus rubber catheter. Most operators use fifty to one hundred milligrams of radium, the amount makes no particular difference in the result. It is well to deliver the entire dose as soon as possible, probably within one week, making not more than three applications in all.

The radium treatment is supplemented with x-ray treatment which we shall not discuss except to say that either one alone should not be depended upon. The radium is applied for the destruction of the local lesion and the X-rays for the control of extensions into the perimetral structures.

The biological effect of radiation upon cancer was first thought to be due almost entirely to the destructive action of the rays upon the cancer cells. It has been shown by Ewing (14), Opitz (6), Schmitz (15), Nakahara (16), Caspari (17), and others, that this is not the only effect, in fact it is probably no more important than the tissue reaction in the normal tissues surrounding the tumor.

This effect is manifested morphologically by a series of inflammatory changes, not only in the tumor itself, but in the surrounding normal tissues. Following the radiation there is seen a hyperchromatism of the nucleus of the tumor cell; a granular degeneration of the entire cell; vacuolization and atrophy. Some of the more superficial cells near the radium applicator undergo necrosis but the bulk of the tumor shows all stages of atrophic degeneration.

The tissues are infiltrated with leucocytes, lymphocytes and plasma cells. There is a marked proliferation of new capillaries thruout the tumor which surround, choke out, isolate or mechanically extrude the tumor cells. The normal vascular supply of the tumor is disarranged, the endothelium showing cloudy swelling, fibrosis and endarteritis obliterans.

This slow destructive process followed by infiltration of the parts with fibrous and hyalin tissue results in regression or disappearance of the tumor. Nature's protective wall, fibrous and hyalin tissue, is greatly reinforced which is conducive to increased localized resistance to further extension of the disease.

When this normal tissue reaction is absent or limited there will be very little beneficial effect noted from the radiation treatment. Factors which limit the tissue reaction are great loss of weight, marked anemia, toxemia, or some serious organic disease complicating the situation. The general physical condition of the patient should always be considered when making a prognosis.

McCarty (18), Sistrunk & McCarty (12) and Ewing (14) have shown that the type of lesion is very important. The amount of natural tissue resistance in the tumor is manifested by a varying amount of lymphocytic infiltration, fibrosis and hyalinization. These are natural barriers against extension of the tumor and their presence improves the prognosis a great deal. The most important factor, however, is the type of cell; the rate of growth and degree of malignancy being in indirect ratio to the degree of cell differentiation.

The extent of the growth will of course determine the prognosis more than any other factor. It is quite obvious that a small localized cancer of the cervix will be more amenable to treatment than one that has invaded the perimetral structures. Many cases are so far advanced that they are incurable by any type of treatment yet devised, but the palliation of symptoms, such as pain, hemorrhage, odor, loss of weight and strength, fully warrants the radium treatment.

SUMMARY

1. There are two general methods of treatment of cancer of the cervix, operation and radiation.
2. The choice of treatment depends upon the extent of the disease. An early localized lesion is equally well treated by operation or radiation. A combination of both methods probably is the best. A borderline or advanced case should be treated exclusively by radiation, occasionally electro-coagulation or cautery is advisable.
3. Biopsy should be done in every case where the diagnosis is in doubt or where it will assist in making a prognosis.

4. Pelvic examinations should be conducted as carefully as possible and any undue trauma avoided. Repeated examinations especially if carelessly done, may spread the disease.

5. Radium should be applied with simple preparation of the patient without undue trauma of the lesion.

6. Radium and X-ray treatment are both indicated in every case.

7. The tissue reaction is as important a factor in the production of good results as the direct destructive action of the rays upon the cancer cells.

8. Prognosis should be based upon the type and extent of the lesion, the age and physical condition of the patient.

9. Frankly incurable cases are practically always amenable to marked palliation of distressing symptoms.

BIBLIOGRAPHY

1. Dr. Henry H. Janeway, The treatment of Uterine Cancer Radium.
2. Rex Duncan, The treatment of Uterine Cancer. Personal Reprint. Los Angeles, Calif.
3. Bailey & Healey, Follow up Results of 908 Cases of Uterine Cancer Treated by Radium. Amer. Journal Obstetrics & Gynecology, Vol. 6, 402. Oct. 1923.
4. Henry Schmitz, The Treatment of Cancer of the Uterus, The Transactions of the American Association of Obstretricians, Gynecologists and Abdominal Surgeons. Vol. 34, 1921. Technique and Statistics in the Treatment of Carcinoma of the Uterus and Contiguous organs with the Combined use of Radium and X-rays, The American Journal of Roentgenology. Vol. 9, No. 10. Oct. 1922.
5. A. Doederlein. Treatment of Gynecologic Cancer with Radioactive Substances. Strahlentherapie, Berlin. 15:766. No. 6, 1923.
6. Erich Opitz, The Biology of Radiotherapy in Cancer. Strahlentherapie, Berlin. 15:750. No. 6, 1923.
7. John G. Clark & Floyd E. Keene, The treatment of Cancer of the Pelvic Organs with Moderate Irradiations. American Journal Roentgenology. Vol. 9:808, 1922.
8. Von Sueffert, Carcinoma of the Cervix Treated Exclusively by Irradiation (5 years results in 500 Cases). Fortschr. a. d. Geb. d. Rontgenstrahlen, Hamberg, 30:123. No. 2, 1922.
9. Paris Radium Institute, The Results of Curietherapy in Cancer of the Cervix Uteri at the Paris Radium Institute during 1919, 1920 and 1921. Arch. d'electric Med. etc., Boreaux 31:265, Aug. 1923.
10. A. J. Ochsner, Cancer from the Surgical Standpoint. Radiology 1:1, Sept. 1923.
11. Leila Charlton Knox, Crocker Institute, The Relationship of Massage to Metastases in Malignant Tumors. Annals of Surgery. Vol. 75:129. 1922.
12. Walter E. Sistrunk & William C. McCarty, Life Expectancy Following Pathological Study of 218 Cases of Cancer. Annals of Surgery. Vol. 75:641, 1922.
13. H. H. Bowing, Section of Radium Therapy, Mayo Clinic, Lecture before the Jackson County Medical Society, Kansas City, Missouri. April 15, 1924.
14. James Ewing, The Mode of Radiation upon Carcinoma. American Journal Roentgenology. Vol. 19:331, 1922.
15. Henry Schmitz, Histologic and Clinical Studies of Cervical Carcinoma Treated with Gamma and X-rays. Northwest Medicine, Vol. 22:232, July 1923.
16. Waro Nakahara, Studies on X-ray Effects. Histologic Study of the Fate of Cancer Cells Innoculated into an X-rayed area. Journal Experimental Medicine. Vol. 38: 309, Sept. 1923.
17. W. Caspari, Tumor and Immunity. Strahlentherapie, Berlin. 15, No. 6, 1923.

X-RAY THERAPY—CARCINOMA OF THE UTERUS

ROBERT H. MILWEE, M.D.
DALLAS, TEXAS

In the application of X-Ray Therapy, as treatment for carcinoma of the uterus, we are confronted with so many important biologic and physical problems, a thorough discussion of any one of which would task the patience of the reader, and since it is assumed that the general reader is more concerned with practical problems involved in ray treatment, a brief discussion of the subject will be attempted from a practical view point. I am giving you a brief resume of impressions gained from actual observation of cases treated.

STATISTICS

Statistics as to cures by modern x-ray treatment of the malignant uterus are probably of not much value at the present time, because of the fact that sufficient time has not elapsed to allow a report on a large number of patients, three and five years following treatment, the present day method of treatment having only been in use about three years in this country. It is rather difficult to discuss x-ray treatment for carcinoma of the uterus without a very careful consideration of radium therapy, because best results are usually obtained by the employment of a combination of the two agents. Dr. Knappenberger has just preceded me with an able discussion of radium treatment for this condition so I shall not burden you with the subject of radium, other than what reference may be necessary in order to define the field of x-rays. It would be interesting to consider a complete history of the development of x-rays in the treatment of malignancy, but space will only permit a very brief mention of the more important developments.

The biologic effect of radium and x-rays, are probably identical, and the physical characteristics of the two agencies do not differ materially, and in their application, to the treatment of carcinoma of the uterus or elsewhere, it is largely a question of selecting that agent which is particularly applicable in the given case, or that agent with which we may secure proper radiation to a given pathological area with the least damage to the normal structures. Though x-rays were discovered some several years before radium, radium has been a more important agent in the treatment of carcinoma within the body cavities, until recent years, by reason of the

fact that in such situations, as malignancy of the cervix and uterus, better dosage could be secured than was possible with x-rays. Therefore, for years radium has played the more important part in malignancy of the cervix and uterus, but with the development of high voltage, or short wave length x-ray, x-rays which approximate the gamma ray of radium, in their penetration, we find x-rays playing a more important role in treatment of internal malignancy, generally.

X-ray treatment of malignancy of the uterus, should be confined to those cases in which the cervix is involved, except as a preoperative and postoperative measure where malignancy involves the fundus only, and it is probably that carcinoma of the cervix is best treated by a combination of radium and x-rays, the radium being applied within the cervix and x-rays to the surrounding tissues from without. The great advancement which has been made in x-ray treatment of the malignant uterus, has been in the development of the more penetrating ray. For the past twenty years, we have been using x-rays for deep seated lesions, of comparatively longer wave length, or those produced by 100,000 volts. During the World War, certain European workers, notably, Fredreich, Sitz and Wintz began the use of a new, or more penetrating ray, generated by the employment of 200,000 volts or more. Soon after the close of the War, we received in this country reports of the very brilliant results of their treatment. During 1921, it was my pleasure to visit the clinics of these early workers and while I was convinced that results were being obtained, which we had never secured by other methods, it has required three years of careful consideration of the subject and a correlation of the work done by other American clinics, to formulate a very definite idea as to the real value of this new form of ray treatment. The application of this new method of radiation has probably increased the efficiency of radium treatment of carcinoma of the cervix, and may contribute to the improvement of surgical statistics where it is used in connection with surgery. The type of case in which we are best able to determine its efficiency by observation, is in the late, or inoperable cases. In such cases as were beyond the aid of radium or surgery, we have observed a number of such cases, completely recovered; the greater number of cases treated were improved; a few were apparently unchanged. Among that class which were apparently cured, about twenty per cent are now well, at the end of three years: of the second class, or that class which was merely benefitted, no patient is well at the end of two years. The great benefit derived from treatment of this middle class of cases, seems to be that a large per cent of them, were made apparently well for a few months, or a year, and their death was not such a lingering one as ordinarily observed from this condition, but they died rather quietly, after the malignancy again became active. The few cases who did not seem to improve, did not exhibit marked ill effects from the treatment.

DOSAGE

Proper dosage has always been a very much discussed subject with radiation therapists. Some claim that the action of x-rays upon cancer cells is a direct one, and, therefore, a particular amount of x-ray should be applied for all malignant cells. Others claim that the death of malignant cells is brought about in an indirect manner, by the response of normal tissue to the action of the x-ray. There is abundant proof to indicate that the malignancy is destroyed by both the direct action and the effect on the normal tissues.

McCarty of the Mayo Clinic has recently stated rather concisely that the normal fighting forces which combat the invasion of cancer tissue are increased in the following manner, by x-ray treatment.

1. Lymphocytic infiltration.
2. Fibrosis.
3. Hyalinization.

The work of Murphy of the Rockefeller Institute corroborates this statement in that Murphy finds local infiltration of leucocytosis following radiation therapy.

Observation of patients treated by radiation therapy indicate that the dose applied should be all that the normal tissue will tolerate without permanent injury, and should be given within a week's time from the starting of the treatment. Patients do not tolerate well repeated large doses. We also observe susceptibility of a given tumor cannot be determined by any one known method other than actual application of treatment, and this is most probably due to the variation in natural fighting forces of the host.

X-RAY IS PROBABLY NOT A CURE FOR MALIGNANCY

While modern therapy is a definite step forward in the treatment of uterine malignancy, curing some, and offering palliation in most cases unattainable by other methods of treatment, we do not believe that it definitely removes from the patient that condition that brought about the malignant growth. The observation of a large number of pa-

tients receiving radiation therapy and their general response to this agent, suggest that this form of therapy may lead to the discovery of the cause of malignant growths. Observation shows that patient receiving x-ray therapy for cancer of the pelvis most always gain in weight following the treatment; this is also a noticeable fact where treatment is administered for non-malignant pathology and frequently occurs even though the patient is well past the menopause. It is also noticeable that the degree of improvement of the malignant condition can be determined by the gain in weight.

Maude Slye of Chicago University, has shown that malignancy in mice is retarded or regresses with pregnancy. Loeb of Washington University has prevented the development of cancer in a family of cancer mice by castration. A careful study of the geographic distribution of certain diseases of unknown origin of the glands of internal secretions is of interest in this connection and shows that malignancy is general more prevalent where simple and toxic goiters are most abundant.

These facts well suggest that the exciting cause of cancer may be rather in some way due to a disturbance of internal secretions, and is probably the result of artificial living, since we find that man is the only animal where the female suffers more than the male from disturbances of internal secretions and malignancy. Scientific investigation has determined that in all other animals malignancy and disturbance of internal secretion is equal in the male and female. While man is the only animal where the female lives differently from the male, we find the female has more disturbances of glands of internal secretions and more malignancy.

This is not an attempt to bring to you a cure for cancer but it is hoped that these facts and observations may in some way assist you in the fight against one of the great enemies of the woman, cancer of the utures.

Discussion by J. HUTCHINGS WHITE, MUSKOGEE.

Too much emphasis cannot be placed upon the importance of early diagnosis. Dr. Hartford points out in his paper the early signs of carcinoma of the uterus and while some of these signs may not mean carcinoma when present in a patient, that patient should be examined not once but often enough to satisfy the doctor what kind of trouble she has. It should be much more satisfactory to the patient, and I think they appreciate it, to be told that there is no cancer. Many cases of erosions of cervix under bland treatment will heal. When they do not heal promptly they are dangerous. One is not justifiable in removing sections for examination unless immediate operation is performed and then these sections should be removed with cautery.

Dr. Sackett's statistics of the percentage of operable cases of cancer and percentages of recovery. It seems to me that those surgeons are remarkably fortunate in discovering early growths or more than dexterous in handling such cases. Dr. Richardson at Massachusetts General Hospital, after fifty years' experience, said that nearly all of his cases of cancer, though some of them lived for years following operation, sooner or later died of cancer. An arbitrary period of five years' freedom does not mean cured.

Cancer which cannot be cured by surgery I believe is not curable by any other known means. If dissection cannot eradicate the growth neither radium or x-ray will cure it. My personal experience with radium and x-ray has been most unsatisfactory. These may prolong life. Is it fair to prolong a life of pain and suffering of a patient who anxiously looks forward to the coming of the night with sorrow and hoping that the morrow may bring surcease to his or her suffering by closing eyes in eternal sleep.

How are we to make an early diagnosis of cancer? Every paper in this symposium has laid emphasis on the way it may be accomplished: *Examination, re-examination and more thorough examination.*

THE MEDICAL RESERVE CORPS IN OKLAHOMA*

Col. L. S. Willour, Med. O. R. C.
MCALESTER

At this time there is a demand being made by the United States Government upon the Medical Profession, which I fear some of us are inclined to treat rather lightly and this apathy is due I believe to lack of study and knowledge of the subject.

In going over the National Defense Act of 1920 it is evident to the observer that its successful operation depends for the most part on the voluntary co-operation of our citizens. No one is drafted or compelled to join in the Military plan of preparedness and clearly it recognizes the principle that National Defense depends upon the citizens themselves and not on a standing army or any regularly employed force. Without the voluntary co-operation of our citizens in carrying out the provisions of the National Defense Act our Country would be left in a military sense practically wholly defenseless.

To the various branches of the service have been drawn men who are leaders in their respective lines of activity. In Oklahoma where is located the 95th Division, we find most of its component parts filled and officers attached above the quota, however, in the Medical Branch of the service there are now some openings for men who we feel should make application and accept their responsibility in the organization of this department of the Reserve Corps. There is an opening for men of this profession no matter what their special line of work may be, whether it be the general practitioner or the man filling the most technical position in our large medical Institutions. We have as Executive Officer Major Robt. B. Hill, who has the situation thoroughly in hand and can, I am sure, assign any applicant to not only the position he can best fill but to one which will appeal to the man assigned.

By the method of assignment which has been adopted, we will be able to avoid wasting talent as was done during the World War, where we saw men of marked technical ability holding sick call for a bunch of negro stevedores or some other equally ridiculous, as well as tragic situation.

While I am particularly interested in filling the existing vacancies in the 320th Medical Regiment and the Medical personnel attached to the various combatant units of the 95th Division, I want to bring to your attention the necessity of filling our quota in the Branch Assignment Group. These assignments as you no doubt know, are from the Surgeon General's office and are to units outside of the Division.

There have been authorized by the Surgeon General many non-divisional organizations such as General Hospitals, Hospital Trains, Station Hospitals, Surgical Units, Evacuation Hospitals, etc., and it appears to me that, if some one would take sufficient interest, some of these organizations might be perfected within the State and we would thereby be doing our duty in filling up the non-divisional organizations.

Already we have one of these organizations perfected in General Hospital No. 56, under Lieut. Col. LeRoy Long. This is a unit composed of Reserve Officers from the University Medical School and are ready in an emergency to render the most efficient service.

Of the sixty-eight officers required to fill the 320th Medical Regiment, thirty-four have been assigned. We also still need twelve more Medical Officers for assignment to the line organizations. Now I can see no good reason why we should not fill our personnel before these members of our State Association leave Oklahoma City.

To meet this obligation which I feel has been put up squarely to the Doctors of this State, it is not necessary to make any sacrifice of either time or money, just your application in the hands of Major Hill will bring your commission without examination although you will be ordered before a board who will simply look into your qualifications as a legally practicing physician.

*Read before the Surgical Section, General Session, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May 13, 14, 15, 1924.

There is open to the Doctors who accept these commissions two methods of instruction; one a correspondence course and the other two weeks training at a summer training camp, both of which are optional but are recommended to those who feel sufficient interest to improve themselves in this branch of military service and receive promotion, however, the plan of promotion in the Medical Reserve Corps has been made definite and certain up to the grade of Lieutenant Colonel, in that the regulations prescribe that promotion to the next higher grade shall be accomplished every five years without examination. For the promotion to the grade of Lieutenant Colonel examination by a board is necessary and fitness for this grade must be demonstrated.

To those who now have commissions or who will make application I want to urge affiliation with the Reserve Officers Association.

The Officers Reserve Corps is a great pool of more than 80,000 of our ablest citizens, picked because of their patriotism and knowledge of matters of National Defense and because of their willingness and ability to help in this great plan. They are in the strictest sense the leaders of the patriotic citizens who will join when need comes in our National Defense.

As such they have two classes of obligations.

First; Military Obligations, such as to keep up and increase their own knowledge and skill in their particular line of military efficiency; by their fitness to command troops, or skill in some science as applied to warfare, or to arrange for the prompt production and furnishing of supplies and munitions, or to instruct others in these things.

Second; Civilian Obligations, such as to familiarize the people with the need for preparedness and what it means to them in the saving of lives and money, and perhaps even of our independence and institutions; and to explain the National Defense Act to them; to support and help the Regular Army and the National Guard in their essential duties to carry out this plan of National Defense; to bring home to our representatives in the Government the needs for support to National Defense, not only in the way of the modest appropriations required to put this excellent and most economical plan of the National Defense Act into as full operation as possible, but also in helping to familiarize the people with this most important matter (for many of our public men have great personal power to bring such matters before the people); to encourage and assist in building up and getting men to enter R. O. T. C. and especially the C. M. T. C. training; and the formation of other means of training and instruction for ourselves and others such as the successful Camp Wadsworth held in New York last summer, also to recruit and build up the strength and membership of the Officer's Reserve Corps.

The Reserve Officers Association of the United States is an organization formed for just this purpose and for no other. Its sole object is to assist in the performance of the Civilian Obligations of the Reserve Officers of the United States. It is not partisan and is not self-seeking. It is not confined to veterans of the World War; on the contrary, every man who becomes an officer in the Reserve Corps is immediately eligible for membership in the Reserve Officers Association of the United States. It is not intended to die out with the veterans of the World War, but to go on with continuing vigor and activity constantly renewing its membership from the young men who each year join the Officers Reserve Corps.

In conclusion I want to congratulate Major Hill on the work he has done for the Medical Reserve Corps in Oklahoma, around such a man we can build a Medico-Military organization that will be second to none and I want to make a personal appeal to the loyal Doctor-Citizens of this State to do your full patriotic duty and give your undivided support to this program of preparedness.

THE JOURNAL
OF THE
Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under direction of the Council

VOLUME XVII AUGUST, 1924 NO. 8

DR. CLAUDE A. THOMPSON.....Editor-in-Chief
508 Barnes Building, Muskogee, Okla.
DR. P. P. NESBITT.....Associate Editor
814 Surety Building, Muskogee, Okla.

Entered at the Post Office at Muskogee, Oklahoma, as second class mail matter, July 28, 1912.

This is the official journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 508 Barnes Building, Muskogee, Oklahoma. $4.00 per year, 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

PRINTED BY OKLAHOMA PRINTING COMPANY, MUSKOGEE

EDITORIAL

BOTULISM—AN UNAPPRECIATED MENACE

During the World War, when slogans dinned the ear to "give 'till it hurts," "eat less meat, less wheat, more corn and vegetables," thousands of our civic centers and householdery grew vegetables of all sorts. Home canning became a ritual, almost an obsession. Shortly, these activities were followed by unusual rises in the number of outbreaks of Botulism. Investigation warrants the inference that resultant morbidity and mortality was solely due to infection with b. Botulism traceable directly, and only, to improper, inefficient sterilization of the commonly used vegetable, beans, corn, carrots, etc.

To reduce fatalities hereafter to the minimum, physicians and health officers should know, and constantly warn of this danger and the simple means of prevention. The well known fact that the infection is unusually resistant to sterilization, ranking in obduracy with the most unmanageable of all—tetanus—must be understood. It should be advised that repeated sterilization from one to two hours daily, for three or more consecutive days is necessary if the larger and gross vegetables most in use are to be rendered safe. It should accentuate the necessity and danger, if everyone were advised that approximately 50 per cent of common garden or sweet corn on the cob is lost by highly efficient packing concerns and that this failure is due solely to two factors—the time elapsing between gathering and sterilization and the large mass to be rendered sterile.

This matter is almost wholly one of prevention—for treatment after infection is futile, as a rule. Every housewife thinks she is qualified to handle the simplicities of her kitchen. We know she is not. That the problem is one having attached intricate knowledge demanding the exactitude of the laboratory—with rigid observance of what they may term "foolishness" which, if neglected, may have as aftermath tragedy, is too well known for comment.

Editorial Notes—Personal and General

DR. S. P. ROSS, Ada, has been appointed Chief Surgeon for the Oklahoma City and Atoka R. R., with headquarters at Ada.

BECKHAM COUNTY MEDICAL SOCIETY met at Elk City last month and held a clinic. They were entertained by Dr. V. C. Tisdal.

DR. and MRS. R. W. WILLIAMS, Anadarko, returned last month from a month's vacation in the north, including a trip to Montreal.

MAYES COUNTY MEDICAL SOCIETY met at Pryor July 2, and transacted the usual business, after which they were entertained by Dr. J. L. Adams.

DR. T. R. PRESTON, and family, Weleetka, autoed to their old home in eastern Kentucky, and will spend July and August visiting friends and relatives.

DR. and MRS. WILLIAM H. BAILEY, President of the Oklahoma County Medical Assn., are spending the summer vacation at Denver, and will visit California.

DR. JOSEPH T. GUNTER, Ochelata, has removed to Wolco, Okla.

OKLAHOMA COUNTY MEDICAL ASSOCIATION enjoyed a picnic at Lincoln Park recently, followed by a swim in Northeast Lake. About one hundred persons attended.

DR. and MRS. H. T. BALLANTINE, Muskogee, are on an extensive trip through the Northwest and Canada. They will visit Yellowstone, Canadian Pacific points, Lake Louise, Banff and other western and Pacific points.

GARVIN COUNTY MEDICAL SOCIETY met and banquetted at Pauls Valley recently, a feature of the meeting being an address by Dr. Curt von Wedel, Oklahoma City, on Plastic Surgery, several clinical cases being presented.

DISTRICT No. 5, Oklahoma State Medical Association, held its annual meeting at Durant on July 8, addresses being delivered by Dr. J. S. Fulton, Atoka; Dr. C. Rosser, Dallas; Dr. Paul Gunby, Sherman, Dr. F. L. Watson, McAlester; Dr. C. C. Gardner, Atoka and Dr. John A. Haynie, Durant.

LICENSES of three Oklahoma physicians were revoked, and warning issued to a fourth, by the State Board of Medical Examiners, after a hearing on July 3. Licenses of Drs. Paul P. Oliver, Shawnee, W. G. Evans, Tulsa and H. P. Clark, Tulsa, were revoked, on the ground of "using advertising of an unprofessional nature and calculated to deceive the public." Mrs. Kathryn Van Leuven, assistant attorney general, was prosecutor.

LE FLORE, CARTER, PITTSBURG and MUSKOGEE COUNTIES, have accepted the cooperative plan for the establishment of model county health departments, and just as soon as arrangements are completed the work will be in operation. These counties will operate by the International Health Board of the Rockefeller Foundation and the Department of Public Health of Oklahoma, contributing $5,000 annually to each, and these counties contributing at least a like amount.

DR. W. L. KENDALL, Enid, is back with his "old love," The Enid institution for Feeble Minded Children. It will be recalled that Dr. Kendall built this institution from a shoestring to one of the cleanest, most efficiently conducted of our State intitutions, and received as his reward such disgusting and ungrateful treatment from incompetent political sources that he resigned. The State and the institution are to be congratulated on his return to their service.

STEPHENS COUNTY MEDICAL SOCIETY met with the Grady County Medical Society recently and the following program was given: "Infection of the Gall Bladder," Dr. W. H. Livermore; "Acute Sinusitis, with Case Report," Dr. U. C. Boon; "Syphilis," Dr. J. C. Ambrister; "Treatment of Diabetes," Dr. A. B. Leeds; "The Ultra Violet Rays," Dr. H. C. Antler. The meeting was addressed by Dr. Carl Puckett, State Health Commissioner, to which the public was admitted, on "Public Health."

DR. D. T. BOWDEN, graduate and former instructor at Johns Hopkins University, has assumed his duties at Oklahoma City as assistant to Dr. Carl Puckett, State Health Commisioner. Dr. Bowden will be in charge of the full time county health unit work, there being now six counties in the state having this full time health work, four through the aid of the Rockefeller Foundation, and two through aid of the U. S. Public Health Service. In addition to Dr. Bowden, Dr. J. F. Mahoney, has been loaned to the state without cost, by the U. S. Public Health Service, who will direct the new department of communicable diseases and epidemiology.

DOCTOR PERCY A. SMITHE

Dr. P. A. Smithe, Enid, was drowned in Little River, near Nashoba while on a vacation trip July 21.

Dr. Smithe located at Wellston, Oklahoma in 1905 after which he located in Enid in 1907 where he has since lived.

Born in Lyndonville, N. Y., August 19, 1878, Dr. Smithe obtained his preliminary education at Lyndonville High School, receiving his A. B. dergee from Cornell in 1903 and graduating in Medicine from the medical department of that institution in 1905.

In 1914 Dr. Smithe entered the Red Cross service being stationed in Vienna, Austria. But after entry of the United States in the war he returned to this country, shortly afterwards accepting a commission in the Medical Corps of the army, but the armistice coming was the cause of his seeing no service. Married to Miss Kathryn Roberts in September 1902, the union resulted in two children, a boy and a girl, the latter surviving, and is now twelve years of age. Interment was made in the Enid cemetery.

DOCTOR RICE M. SHAW

Dr. Rice M. Shaw died at Oklahoma City on June 30, 1924 of uremic poisoning. Dr. Rice was born at Sercy, Arkansas, on May 12, 1874, and was a graduate of Little Rock Medical College, of the class of 1899. Prior to his practice in Oklahoma City for the past four years, he lived at Alex, Oklahoma. He leaves a wife, Mrs. Myrtle Shaw, and a daughter, Miss Lila Shaw also one brother and one sister. Dr. Shaw was a member of the Oklahoma County Medical Association and of the state association and a Mason. Burial was at Fairlawn Cemetery under the auspices of Hiram Lodge A. F. & A. M. on July 1st 1924.

DOCTOR J. ANGUS GILLIS

One of Frederick's best known and best beloved citizens, Dr. J. Angus Gillis, passed away at the University Hospital in Oklahoma City, on June 19, 1924, after an illness of several months of a mastoid affection, a surgical operation failing to give relief. Dr. Gillis was a pioneer resident of Frederick, and was always in the forefront of every movement for the betterment of the community, was prompt and faithful in the care of the sick, and had many friendships of a warm and lasting nature. He had served as Health Officer of Frederick and as County Superintendent of public health, and on the board of education.

As one of the most prominent Masons in the state, Dr. Gillis had held most of the high offices in the order, and had taken the highest degrees in both the Scottish and York rites of Masonry. During the World War, Dr. Gillis served his counrty, with the rank of Captain, in the medical branch.

He was president of the Tillman County Medical Society, and a member of the old Comanche Medical Association, and of the Oklahoma Territorial Medical Association. On his death, he was a member of his county and state organizations, and a Fellow of the American Medical Association.

Dr. Gillis was born at DeFuniac, Florida, March 10, 1866. He resided in Austin, Texas, during his early manhood, and began the practice of medicine near there, after his graduation in Medicine in 1895, from the University of Tennessee; he was actve in his profession in Frederick since 1902. Dr. Gillis is survived by his wife and two children.

Abstracts. Observations from Current Medical Literature

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
1006 First Nat'l. Bank Bldg. Oklahoma City

DELAYED TRAUMATIC ULNAR NERVE PARALYSIS. CLINICAL CASE REPORT.

Miss F. C., admitted December 27, 1923, age 16, white.

Came to the clinic because of a progressive disability of the right hand in which there was numbness in little and ring fingers and an inability to use these fingers normally.

History: Eleven years ago she fractured the right arm in the elbow joint. It healed all right but left a limitation of extension to about one-half that of normal. Six years ago she fractured the same elbow but it healed favorably and function was really improved. Eighteen months ago she injured the same elbow while pulling a rope and although the injury was not of serious nature, she at once noted numbness of little finger. She could feel things with it but it just felt numb. This feeling has never disappeared and the little and ring finger have gradually drawn so that they remain hyper-extended at the knuckle joints and she cannot straighten them. About three months ago noticed that the muscles on the back of hand were wasting away and also the thenar eminence was getting less prominent.

X-Ray: X-ray of elbow reveals a fracture of the internal condyle of the right elbow with non-union.

Elbow: Examination—Internal condyle appears enlarged and feels abnormal in contour. Crepitus is obtained in this region and condyle is freely movable with ulnar action. There is no limitation of motion in elbow but strength is somewhat impaired.

Hand: Atrophy of interosseii is marked, cannot spread ring and middle fingers, hyper extension at knuckle joints with flexion of phalangeal joints and cannot fully extend these two fingers without holding the knuckle joint fixed. The thenar eminence is plainly atrophic and there is partial loss of sensation over little finger and inner outer aspect of ring finger.

Operation: Eliptical incision from one and one-half inches below inner condyle to a like distance above inner condyle. Ulnar nerve was enlarged and bound tightly to the medial condyle for a distance of four inches. It was transpanted to the anterior inner aspect of the elbow.

NO. 1 A BASEBALL FINGER CURED BY OPERATION BY RICHMOND STEVENS, M.D., New York City. The Jour. of Bone and Joint Surgery, April 1924, page 469.

In glancing over various articles for selection as abstracts, the writer came across this unusual topic upon a very common deformity and recommends that the operation be tried. The author of the article recommends it for those cases where there is only tendon injury. He saw his case six weeks after injury and after three weeks' conservative treatment. The patient was seventeen years old, was hit by a baseball on the tip of the right middle finger, the finger became "crooked." A splint had been applied but the deformity persisted, which was a flexion of the distal inter-phalangeal joint of the right middle finger. The distal phalanx could be fully extended passably but not actively. The author made a diagnosis of a separation of the extensor tendon at its insertion into the last phalanx and this was confirmed by open operation. The tendon was pulled down to the point of insertion and fixed with kangaroo sutures. After four weeks of splinting and active movement, the finger gradually returned to normal.

NO. 2. FRACTURED SPINE: PRACTICAL CARE AND TREATMENT.—W. C. G. Kirschner, Surg., Gyn., and Obst., June, 1923, p. 830.

The author states that diagnosis and surgical treatment of this lesion have received much attention recently, but little has been said about many important details in the management of these often difficult and discouraging cases, especially those associated with extensive paralysis. He reports in detail a case of fracture and dislocation of the third and fourth lumbar vertebrae with paralysis of lower limbs and loss of control of bladder and rectum, with complications of decubitus, cellulitis, cystitis, impacted feces, etc. The details of nursing, the uses of plaster shell and cast, hammock suspension of limbs from Balkan frame, surgical care of bed sores, and other practical points are discussed. By extreme patience and care a favorable result was obtained in a

hopeless type of case.

Results: Two weeks after operation patient insisted there was strength returning to the fingers, but no change in areas of sensation to be detected. At the end of three months there was an increase in sensation over the lateral half of the ring finger. At the end of six months patient writes that the wasted areas are filling out; that movement is much better and highly elated over the general improvment which has taken place.

Discussion: This condition was described by Panas over forty years ago, and there are probably not more than one hundred cases on record of a distal ulnar neuritis or paralysis appearing a number of years after injury. It is thought that the above case referred to would entirely recover.

BACTERIOLOGY and PATHOLOGY

Edited by Wm. H. Bailey, A.B., M.D.
Wesley Hospital, Oklahoma City

SOME PRACTICAL POINTS IN CONNECTION WITH THE WASSERMANN REACTION.—By F. Green, M. D., Montreal, Canada. Journal of Lab. & Clin. Med., May 1924.

At the present time we are unable to say why various agents and conditions will cause sera to give an anticomplementary reaction. The following are some of the factors which in a practical way come to the forefront in performing the Wassermann reaction.

Antigen in high doses. When titrating antigens the object is: 1, to find the special doses which in the presence of a known positive serum will give a definite positive complement fixation; 2 the same dose with normal serum must give complete hemolysis; 3 the extract by itself must also give complete hemolysis. Having found this dose we must also leave a margin to provide against absorption of a certain small amount of complement by the extract and by the serum of the patient. Extracts in high doses will give an anticomplementary action, so antigens should be titrated as often as possible and one-half the anticomplementary dose used.

Sera Containing Fat. Fat, as well as lipoid substances, in the serum may give a falsely positive Wassermann or an anticomplementary action. For this reason the blood should not be drawn just after a meal.

Fat Solvents, Distilled Water and Iodine. Alcohol, ether, chloroform, water and tincture of iodine, in the proportion with which they can reasonably come in contact with the blood in the taking of blood specimens, cannot cause an anticomplementary action.

Overheating of the Entire Blood and of the Sera. Heating of the blood or of the separate serum to a higher degree of temperature for a protracted period will, by coagulating action on the proteins of the serum, give rise to an anticomplementary action. However, even if heated to 60 degrees C. but for a short period sera or bloods will not give rise to anticomplementary action.

Old Sera and Sera Infected with Bacteria. If sera are kept sterile and in the ice-chest, they will keep for a long time. Negative sera will keep for a longer period than positive sera. At the same time, it is always a safe practice when using old sera to heat them again to 55 degrees for 30 minutes before using. Infected sera, especially if old, are always strongly anticomplementary.

Influence of Diarsenol. Specimens of blood from 100 patients before and after injection of diarsenol were tested and only two cases were anticomplementary after the injection. The presence in the serum of fresh solution of diarsenol in a proportion of 0.025 per cent may give rise to anticomplementary action. However, if the blood is collected in the same apparatus the first small amount of blood should be discarded.

In spite of all attempts to substitute a more direct and less complicated procedure for the somewhat cumbersome Wassermann test, no reaction as yet proposed can compare in reliability with the full Wassermann test. It is unfortunate that the Wassermann is so surrounded with pitfalls, but, given a reasonable measure of care on the part of the pathologist, these can be surmounted in almost all cases. — M. E. W.

OBSTETRICS and PEDIATRICS

Edited by Carroll M. Pounders, M. D.
532 Liberty National Building, Oklahoma City

A TONIC INSUFFICIENCY OF THE STOMACH A CAUSE OF VOMITING AND A LACK OF APPETITE IN INFANTS.—Gustav Linberg, Amer. Journal of Diseases of Children, March, 1924.

Congenital stenosis or atresia, or more commonly, pylorospasm or pyloric stenosis is responsible for a great many cases of persistent vomiting in the new born. But there is a type of vomiting that has been difficult to explain heretofore. It is usually called habitual vomiting. It has been difficult to control. In this type of cases there is usually no visible peristalsis or pyloric tumor. The vomiting is persistent, coming immediately after each nursing, or even some time afterwards. It may be quite voluminous but is usually not projectile. The vomitus may show a yellowish color from the presence of bile. The baby loses weight, becomes dehydrated and may have a subnormal temperature. There is loss of appetite.

These cases have been studied under the fluoroscope with results that are interesting. While the child was in the horizontal position the stomach would fail to empty itself at all. The peristolic waves were observed as in the normal. On placing the child in an almost erect position the food was seen to pass through the pylorus with no difficulty. In both positions tonic contractions of the stomach about its contents was not seen. On assuming the half-erect position the vomiting stopped and a steady normal gain was observed.

This can be explained by the function of the infants stomach as contrasted with that of the adult. In the adult there is a double function. First there is a tonic contraction. The walls of the stomach contract around its contents, giving the stomach a varying volume and shape, according to the degree of fullness. This has been called the peristolic function. Then there are the peristaltic contractions, consisting of waves of contraction passing from the cardia to the pylorus. Emptying of the stomach is a result of the combination of the two. In the normal infant's stomach the peristaltic action is not developed. It does not contract down on its contents. The peristaltic action is developed and is usually sufficient to produce emptying. There being no tonic contrac-

tion the stomach remains completely distended, even when there is only a small content. This explains the difficulty of emptying in the horizontal position in certain cases. It also explains why this is accomplished when the baby is put in a half erect position. On assuming this position the symptoms—loss of appetite and vomiting—disappear at once. The peristaltic action is aroused by giving food of a more solid consistency—even in young infants.

EVERY DAY IS BABY DAY.—Health News and Views, Hygeia, May, 1924.

With the slogan, "Every Day Is Baby Day," the state of Indiana, through its division of infant and child hygiene of the state board of health, is attempting to secure for every Indiana baby the following:

1. Healthy parents.
2. Instruction and care of mother by physician.
3. Mother free from overwork or worry.
4. Mother's milk. Gradual weaning by the end of the first year.
5. Regular hours for meals, bath and sleep. Well balanced diet.
6. Water to drink between meals.
7. Sleep undisturbed in a dark room having a constant current of cool, fresh air.
8. Clothing that does not restrict.
9. Gentle play with quiet laughter.
10. A part of each fine day out of doors.
11. Daily exposure to sunlight, indoors or out. (Eyes protected.)
12. Comfort. Avoiding extremes of heat or cold.
13. A happy home.
14. Regular "checking up" by physician.
15. Protection: From kisses with germs, fingers poking for teeth, showing off, bouncing and high tossing, unsuitable food, too frequent feeding, pacifiers, dirt, discord, loud voices and nagging, movies and jazz.

MENINGEAL HEMORRHAGES IN THE NEWBORN AND THEIR REMOTE CONSEQUENCES.—Alfred Gordon, Amer. Journal of Diseases of Children, April, 1924.

The cause of meningeal hemorrhage is, principally, the tearing of the membranes due to their stretching, leading to rupture of the blood vessels. The tearing is produced by the great cranial stress frequently resulting from protracted, difficult labor, with instrumental delivery—especially when the instruments are applied with excessive force or to the wrong diameter of the head.

As a preventive aspect must be considered all forces that are liable to lead to tearing of the meninges and blood vessels. These consist of wrong presentation and disposition of the fetus and other causes of difficult labor, such as prolapse of the cord, and the use of instruments or various manipulations in the delivery of the fetus.

Supratentorial and infratentorial hemorrhages, generally speaking, present somewhat different clinical pictures. In the former the blood spreads over the cerebral hemispheres and cannot go beyond the lower surface of the tentorium. This causes a bulging fontanel and brings on a group of nervous phenomena—such as sleeplessness, and great restlessness with convulsive seizures. Cyanosis is late in appearing and, when it does appear is not pronounced. Lumbar puncture does not avail much in this type of case, as the blood cannot reach the subarachnoid cavity easily. Craniotomy in the first few days of life, before the clot has already produced damage to the cortical tissue, is the only procedure that produces favorable results.

In the infratentorial type the blood spreads over the hemispheres of the cerebellum and into the medulla. It reaches the subarachnoid space and may extend into the spinal cord. There is considerable depression, apathy, somnolence, early cyanosis vasometer and respiratory manifestations with rigidity of the neck muscles. The anterior fontanel distends slowly. In this type of case lumbar puncture may be of considerable benefit. Frequent withdrawal of fluid is often necessary. Complete recovery has been reported in numbers of cases.

The more remote effects of the hemorrhage are seen in such conditions as Littles disease, hemiplegias, athetosis, athetoso-choreic conditions and idiocy.

THE NECESSITY OF BETTER DENTISTRY FOR CHILDREN.—Charles B. Bray, D.D.S., Archives of Pediatrics, Feb., 1924.

It is pointed out that dentistry for children has been the most neglected field of any of the branches of dental science. This condition of affairs is changing and preventive dentistry is coming into its own. It is now becoming recognized that if focal infection is to be eliminated from a dental standpoint, the work must be begun before it is established—in the early stages of childhood.

With the exception of accidents, 99 per cent of the bad or abscessed teeth in children are caused by neglect and carelessness. The writer believes that the three most prevalent causes for this condition are: (1) Lack of education of the laity in regard to the importance of mouth hygiene. (2) The difficulty of working on the teeth of children and the care and diplomacy necessary in handling them. (3) The haphazard way in which dentistry for children has been done in the past—often without charge. Usually the man who worked for the family worked for the children, and neglected a great many times to do the best thing for the child because of the time it required, knowing that he was not to receive any compensation for it.

Because the temporary teeth are in a constant state of disintegration they require more care than the permanent ones and will not stand as much neglect. The work of Rosenau, Hunter and Billings proves conclusively that the teeth can be important foci of infection for a great many serious conditions. The writer believes that if we eliminate diseased mouths and infected tonsils, we will lessen by 50 per cent the child's chances of having the contagious diseases of childhood, such as are contracted or carried in the mouth and nasal passages. And we would make a 75 per cent better student at school and a 100 per cent better child mentally and morally. Statistics prove that the child with infected teeth and tonsils is far below normal from an educational standpoint.

TUBERCULOSIS

Edited by L. J. Moorman, M. D.
611 1st Nat'l. Bank Bldg., Oklahoma City

BRIDGING THE CHASM BETWEEN THE FUNDAMENTAL AND THE CLINICAL BRANCHES IN MEDICAL SCHOOLS.—The Journal of the American Medical Association, August 18, 1923.

The author feels that the criticism of many teachers of clinical subjects in medical schools, that the fundamental subjects are not well taught, is unjustified. He considers them well taught as a rule but feels that too much time lapses and that there is too little connection made between them. He suggests that much time and energy could be saved by teaching the student the physical and x-ray findings of the living normal human body at the time or just after he has finished his work in the fundamental branches.

This has been done for some time at the University of Minnesota Medical School in connection with courses on the diagnosis and treatment of diseases of the lungs. It has been found that students who have taken the work on the normal chest are able to acquire as much clinical knowledge in a given time as those who have not had this preliminary course.

STUDIES ON THE RESPIRATORY ORGANS IN HEALTH AND DISEASE.—1. A Valuable Aid in the Diagnosis of Early Tuberculosis. J. A. Myers, Ph.D., M.D., Minnesota Medicine, August 1921.

About one-half cc. of the suspected material, sputum or other discharge, negative by usual laboratory tests, is injected subcutaneously into the inguinal region of a guinea pig. The inguinal lymph nodes on the site of the injection become enlarged and palpable in about ten to fourteen days in most positive cases. It is not necessary to section and study these nodes microscopically since so many have been studied this way and the findings were almost invariably those of a tuberculous lesion. In order to confirm the diagnosis, however, a test may be made with Kock's Old Tuberculin. If negative the animal should be kept under observation and the test repeated in a few days. If negative after two weeks it is safe to report a negative diagnosis.

This simple method, requiring neither a high degree of laboratory skill nor elaborate equipment, often enables the physician to make a diagnosis weeks before it could be made otherwise.

GRADUATE INSTRUCTION IN TUBERCULOSIS.—J. A. Myers, Ph.D., M.D. The Journal of the American Medical Association, February 3, 1924.

Statistics compiled by the Minnesota State Advisory Commission show that 82.7 per cent of the patients admitted to the state and county sanatoriums are moderately and far advanced and have therefore lost their best chances for recovery before admission. It is evident that something is wrong with the system of medical education when such a condition prevails.

Owing to the overcrowded curriculums in medical schools, students cannot become expert in any particular branch. Post-graduate work thus becomes a necessity for the training of specialists.

The University of Minnesota Graduate School of Medicine has access to about 1500 tuberculous adults and more than 500 children in sanatoriums and preventoriums. It offers special advantages for the study of all diseases of the lungs and allied subjects. The objects of the school are to offer special training in the diagnosis of early tuberculosis to general practitioners, to train laboratory and x-ray specialists, to train research workers and especially to train specialists with a working knowledge of tuberculosis as a whole.

TUBERCULOSIS IN SCHOOL CHILDREN: ITS DIAGNOSIS, CLASSIFICATON AND TREATMENT.—Minnesota Medicine, August, 1923. J. A. Myers, Ph.D., M.D.

While it is usually easy to detect tuberculous infection in children, it is extremely difficult to differentiate between clinical and non-clinical lesions.

In examining school children we find five main groups. (1) Children with no evidence of tuberculosis. (2) Children with tuberculous infection without tuberculous disease. (3) Cases of masked juvenile tuberculosis. (4) Children with definite tuberculosis of the lymph nodes, particularly the bronchial and cervical nodes. (5) Children with definite pulmonary tuberculosis.

A negative diagnosis may be made safely with children of the first group after they have been given a thoro examination.

Children of the second group have the same findings except that they show a positive reaction to tuberculin.

Children of the third group have in addition to a positive tuberculin reaction such symptoms as loss of weight, frequent colds, occasional fever, or cough which cannot be accounted for otherwise. It may be impossible to locate a tuberculous lesion but it is believed to exist some place in the child's body.

Children of the fourth group have demonstrable lesions of the bones or lymph glands. Tuberculosis of the bronchial nodes is particularly difficult of diagnosis. A history of exposure is important and a positive tuberculin test and demonstration of enlarged bronchial glands are essential for diagnosis. In order to make a diagnosis of tuberculous cervical glands there must be definite enlargement of these glands. Any gland enlarged over three months and not otherwise explained should be regarded as tuberculous. History of exposure is important but does not establish diagnosis. All other causes for enlargement of these glands such as Hodgkins disease, acute and chronic infected tonsils, carious teeth, pharyngitis, pediculosis, otitis media and syphilis should be carefully ruled out. A microscopic examinaton should be made on all specimens removed.

Children of the fifth group are for the most part above the age of ten or eleven years. However, pulmonary tuberculosis may exist at any age. Emphasis must be placed upon past history and present symptoms, such as prolonged exposure, idiopathic pleurisy with effusion, hemoptysis, persistent cough, expectoration, pain in chest, fever, rapid pulse, loss of weight and strength, dysponea, night sweats and anorexia. The presence of any one of these should lead one to consider pulmonary tuberculosis.

Children falling into groups one and two may be returned to their regular schools with necessary provisions for further examinations and observation.

Those in group three should be placed in an observation ward where they may be carefully studied as long as necessary.

Those in group four should be sent to a special school for tuberculous chlidren such as the Lymanhurst School in Minneapolis. Those found to have clinically active disease should be placed in institutions where such conditions are given special attention. Later they may be transferred to the open-air school and when their condition warrants it, back to their regular schools.

The children in group five should be sent to the school for tuberculous children. If the lesions prove non-clinical they should be transferred to an open-air school under competent supervision. Those with any evidence of clinical activity should be sent to a chlidren's ward in a hospital or sanatorium where they should remain until the disease is apparently arrested. They may then be readmitted to the school for tuberculous children. The children with inactive clinical tuberculosis may remain at their school work under very strict supervision.

In dealing with tuberculous children the welfare of the community as well as that of the individual must be kept constantly in mind. Many cases not clinically active are capable of discharging bacilli and thus infecting others. In special schools the children are taught not only how to protect others but how to lead happy, useful lives at the same time.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

LOCALIZATION OF FOREIGN BODIES IN THE EYE.—Hubeny, M. J.: Radiology, 1924, ii, 33.

No examination for the possible presence of a foreign body in the eyeball should be considered complete without the use of the X-ray. If a foreign body is demonstrated it should be localized by means of a localization apparatus and not just by anteroposterior and lateral views.

From a legal standpoint a negative report should always read: "The eye appears negative for foreign body opaque to the X-ray."

Hubeny establishes the presence of an opaque foreign body by using two films exposed simultaneously. On one he takes a postero-anterior projection and on the other a lateral projection. Intensifying screens should not be employed. Dependence cannot be placed on movement of a foreign body to demonstrate its presence in the eye as foreign bodies embedded in the sclera or eye muscles produce the same effect and movement has less diagnostic value the nearer a foreign body lies to the pole. When an instrument such as Sweets is used the head should be adjusted before each exposure. When the foreign body is a splinter of glass, a roentgen ray examination should be made.

THE SURGICAL TREATMENT OF CONCOMITANT SQUINT.—Peter, L. C.: Atlantic M. J., xxvii, 266.

The eyes may be straightened by tenotomy, by tendon tucking and by resection with or without advancement. The treatment depends upon the type of squint and whether or not the deviating eye is amblyopic. If the eye is hopelessly amblyopic only a cosmetic operation is indicated and the surgery is confined to one eye. In such cases the author does a resection with advancement, depending upon the angle of squint. If this is not sufficient a tenotomy of the opposing muscle in the same eye is warranted.

If vision is equally good in both eyes and fusion is fair or good, the same amount of surgery should be done on both eyes and the operation should consist in resection with or without advancement, never tenotomy. The same treatment is indicated in alternating convergent squint.

ABSCESSES OF THE NASAL SEPTUM.—Carter, W. W.: Med. J. & Rec., 1924, cxix, Supp, xi.

Carter is of the opinion that practically all abscesses of the nasal septum are the result of trauma. In the treatment an L-shaped incision is made on the left side, the long arm of the L corresponding to the anterior border of the septum and the short arm extending backward along the floor of the nose. The incision is made freely into the abscess cavity. The pus is then washed out with warm sterilized salt solution, the cavity is cleaned out with sterile absorbent cotton until practically dry, then with carbolic acid and last with 95 per cent grain alcohol and then gold wire splints are introduced into each nasal fossa.

For the correction of saddle-back deformity due to abscess the author transplants autogenous bone and cartilage grafts. A strip of conjoined bone and cartilage from a rib is introduced through a slit in the roof of the left nasal cavity in such a manner as to build up and support the nasal bridge. The upper end of the graft, which is placed in contact with the frontal bone just above the nasal spine, establishes bony union in about two months. The lower end of the graft which is composed of cartilage extends into the tip. The transplantation is done as soon as the abscess has healed.

THE TREATMENT OF PARANASAL SINUS DISEASE IN INFANTS AND YOUNG CHILDREN. Dean, L. W.: Laryngoscope, 1924, xxxiv, 30.

Dean thinks that a suitable climate is one of the most important factors in the prognosis of chronic paranasal sinus disease in children and infants. The next most important factor is diet and the author emphasizes the importance of the fat vitamin. Other important factors such as proper hygienic conditions, dress, living and sleeping rooms are discussed.

Diseased tonsils and adenoids should be removed in every case of chronic paranasal sinus disease as the author has found that cures have been affected in eighty per cent of the cases by such procedures.

In children a recurrence of the trouble following a thorough operation on the sinus is unusual. A sinus should not be operated upon until nonsurgical treatment has been tried for several months and has failed to bring about a cure. Radical operations should be done only when the condition can be relieved only by eradication of the sinus trouble.

STANDING COMMITTEES

Medical Defense—Drs L. S. Willour, Chairman, McAlester; P. P. Nesbitt, Surety Bldg., Muskogee; J. H. White, Surety Bldg., Muskogee; C. A. Thompson, Commercial National Bank Bldg., Muskogee; Ralph V. Smith, 610 Commercial Bldg., Tulsa.

Medical Legislative—Drs. J. M. Byrum, Chairman, Shawnee, W. E. Sanderson, Altus; A. L. Stocks, C. A. Thompson, Muskogee.

Hospitals—Drs. Fred S. Clinton, Chairman, World Bldg., Tulsa, Ralph V. Smith, 610 Commercial Bldg., Tulsa; McLain Rogers, Clinton; C. A. Thompson, Commercial National Bank Bldg., Muskogee.

Medical Education—Drs. Wann Langston, Chairman, University Hospital; A. B. Chase, Colcord Bldg., Lee Riely, Oklahoma City.

Tuberculosis, Study and Control—Drs. Leila E. Andrews, Chairman, Oklahoma City; Horace T. Price, Tulsa; T. H. McCarley, McAlester; Tom Lowry, Oklahoma City.

Health Problems in Education—Drs. J. T. Martin, Chairman, 200 W. 14th St., Edw. F. Davis, 343 American National Bldg., Oklahoma City; A. S. Risser, Blackwell; T. W. Stallings, 114 W. 4th St., Tulsa.

Cancer, Study and Control—Leroy Long, Chairman, Oklahoma City; Gayfree Ellison, Norman; G. A. Wall, Palace Bldg., Tulsa; Horace Reed, 1st National Bldg., Oklahoma City.

Venereal Disease Control—Drs. W. J. Wallace, Chairman, 830 American National Bldg., Rex Bolend, 208 Colcord Bldg., Oklahoma City; E. L. Cohenour, 413 Bliss Bldg., Tulsa.

Vision, Conservation of—Drs. W. Albert Cook, Chairman, Tulsa; D. D. McHenry, 301 Colcord Bldg., C. M. Fullenwider, 404 Commercial National Bank Bldg., Muskogee.

Benefactions—Drs. L. J. Moorman, Chairman, 611 First National Bldg., Oklahoma City; J. H. White, Surety Bldg., Muskogee; A. W. Roth, Tulsa; L. A. Turley, Norman.

Necrology—A. S. Risser, Blackwell.

OFFICERS OKLAHOMA STATE MEDICAL ASSOCIATION 1924 - 1925

President, 1924-25, Dr. E. S. Lain, Patterson Bldg., Oklahoma City.
President-Elect, Dr. P. P. Nesbitt, Surety Bldg., Muskogee.
First Vice-President, Dr. G. S. Baxter, Shawnee.
Second Vice-President, Dr. J. S. Fulton, Atoka.
Third Vice-President, Dr. W. H. Livermore, Chickasha.
Secretary-Treasurer-Editor, Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee.
Associate Editor, Councillor Representative, Dr. P. P. Nesbitt, 810 Surety Bldg., Muskogee.
Meeting Place, Tulsa, May 1925.
Delegates to A. M. A., Dr. W. Albert Cook, Palace Bldg., Tulsa, 1924-25-26. Dr. McLain Rogers, Clinton, 1924-25.

STATE BOARD OF MEDICAL EXAMINERS

Dr. C. D. F. O'Hern, F. A. C. S. Pres. Tulsa; Dr. O. N. Windle, Vice-Pres. Sayre; Dr. J. M. Byrum, Secretary-Treasurer, Shawnee; Dr. Harper Wright, Grandfield; Dr. H. C. Weber, Bartlesville; Dr. G. E. Pyatt, Oklahoma City; Dr. D. W. Miller, Blackwell; Dr. L. E. Emanuel, Chickasha; Dr. W. E. Sanderson, Altus.

Meetings held on second Tuesday and Wednesday in January April, July and October. Oklahoma City. Do not address communications concerning State Board examinations, reciprocity, etc., to the Journal or to Dr. C. A. Thompson, Secretary, but to Dr. J. M. Byrum, Shawnee, Secretary of the Board.

The applicant for license, either by examination or reciprocity shall be a graduate of a medical school, the requirements of which for graduation shall have been, at the time of graduation, in no particular less than those prescribed by the Association of American Medical Colleges for that particular year.

Reciprocal relations have been established with Missouri, Colorado, New Jersey, California and Louisiana, on basis of examination only, Arkansas, Georgia, Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin, West Virginia, on basis of a diploma and a license without examination in case the diploma and the license were issued prior to June 12, 1908.

COUNCILORS AND THEIR COUNTIES.

District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Grant, Garfield, Noble and Kay. A. S. Risser, Blackwell. (Term expires 1924.)

District No. 2. Dewey, Roger Mills, Custer, Beckham, Washita, Greer, Kiowa, Harmon, Jackson and Tillman. Dr. Alfred A. Bungarot, Cordell. (Term expires 1926.)

District No. 3. Blaine, Kingfisher, Canadian, Logan, Payne, Lincoln, Oklahoma, Cleveland, Pottawatomie, Seminole and McClain. Dr. Walter Bradford, Shawnee. (Term expires 1925.)

District No. 4. Caddo, Grady, Comanche, Cotton, Stephens, Jefferson, Garvin, Murray, Carter, and Love. J. T. Slover, Sulphur. (Term expires 1926.)

District No. 5. Pontotoc, Coal, Johnston, Atoka, Marshall, Bryan, Choctaw, Pushmataha and McCurtain. Dr. J. L. Austin, Durant. (Term expires 1925.

District No. 6. Okfuskee, Hughes, Pittsburg, Latimer, Le Flore, Haskell and Sequoyah. L. S. Willour, McAlester. (Term expires 1924.)

District No. 7. Pawnee, Osage, Washington, Tulsa, Creek, Nowata and Rogers. Dr. Gregory A. Wall, Tulsa. (Term expires 1926.)

District No. 8. Craig, Ottawa, Delaware, Mayes, Wagoner, Cherokee, Adair, Okmulgee, Muskogee and McIntosh. Dr. P. P. Nesbitt, Surety Bldg., Muskogee. (Term expires 1925.)

CHAIRMEN OF SCIENTIFIC SECTIONS

General Medicine, Neurology, Pathology and Bacteriology, Dr. H. T. Ballantine, Chairman, Surety Building, Muskogee. Dr. Horace T. Price, Secretary, 615 Commercial Bldg., Tulsa.

Eye, Ear, Nose and Throat, Dr. J. C. Macdonald, Chairman, Patterson Bldg., Oklahoma City. Dr. James C. Braswell, Secretary, 726 Mayo Bldg., Tulsa.

Genito-Urinary, Skin and Radiology, Dr. E. Ledley Cohenour, 205 Bliss Bldg., Tulsa, Chairman. Dr. C. J. Woods, Wright Laboratory Bldg., Tulsa, Secretary.

Obstetrics and Pediatrics, Dr. Carroll M. Pounders, Liberty Bldg., Oklahoma City, Chairman. Dr. R. M. Anderson, Shawnee, Vice-Chairman; Dr. C. E. Bradley, 610 Commercial Bldg., Tulsa, Secretary.

Surgery and Gynecology, Dr. L. A. Hahn, Guthrie, Chairman; Dr. Stratton E. Kernodle, 119 W. 5 st., Oklahoma City, Secretary.

CLASSIFIED ADVERTISEMENTS

Advertising under this heading is charged at the following rates; First insertion, 50c per line: subsequent insertions, 25c per line.

FOR SALE—Office and equipment, at a very reasonable price, of the late Dr. J. B. Murphy. A good location in a good college town; an excellent opportunity. Address: Mrs. Anna K. Murphy, 1224 W. 3rd Ave., Stillwater, Okla.

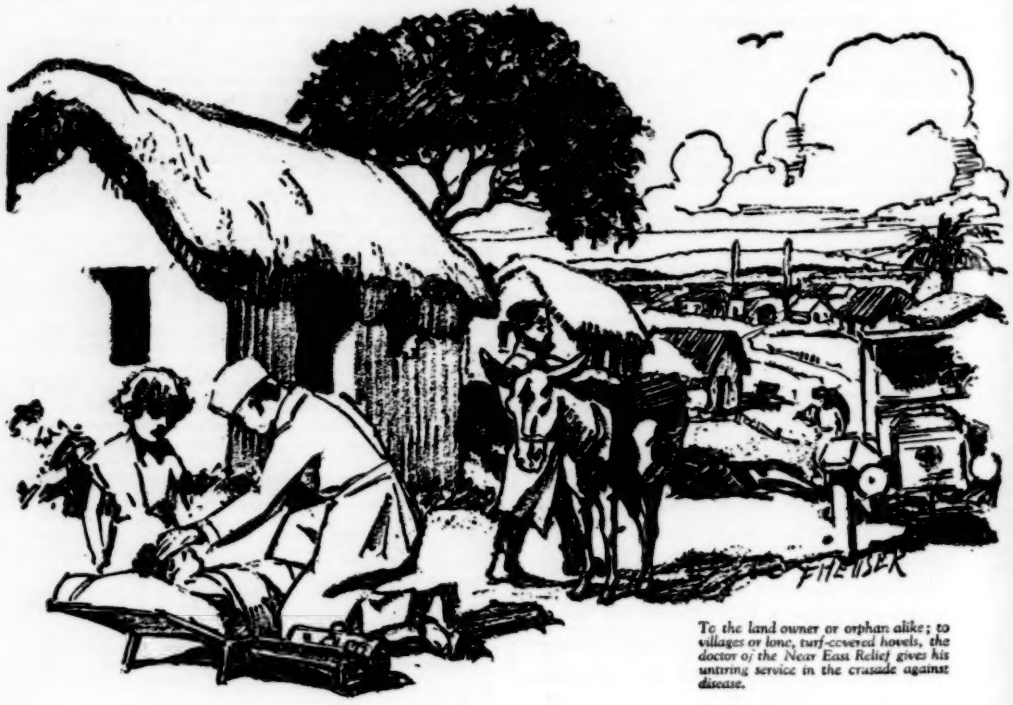
FOR SALE—Office furniture, books, instruments, practice and residence of the late Dr. J. F. McArthur, Wilburton. Address Mrs. J. F. McArthur, Box 262, Wilburton, Okla.

Radium for Rent

Why not treat your patients yourself with radium under the direction of an experienced radium therapist? Radium loaned to physicians at very reasonable rates and detailed information furnished as to how to apply it. Send for descriptive literature explaining our Radium Rental Service and the pamphlet "Indications for Radium Therapy."

QUINCY X-RAY & RADIUM LABORATORIES

731 Hampshire Street Quincy, Illinois



To the land owner or orphan alike; to villages or lone, turf-covered hovels, the doctor of the Near East Relief gives his untiring service in the crusade against disease.

Bringing Health *across the* World

IN the wake of ceaseless warfare; in the throes of starvation and innumerable plagues, multitudes of ragged humanity across the world, pin their faith of life to the doctors of the Near East Relief. Striving to bring health back to weakened bodies, the doctor knows that his great capacity to administer relief is founded in the quality of his medicines.

Realizing that a human life may depend upon the efficacy of a pharmaceutical, the House of Milliken makes each one of its 4,000 products with the utmost care and science. Only the best raw materials are selected. Only highly trained chemists are employed to compound these pharmaceuticals in Milliken's gleaming, modern laboratories.

You physicians know the inestimable value of depenable medicines—medicines which fully meet your requirements, not only once, but always. Many of you know the unvarying purity, strength and potency of Milliken pharmaceuticals. It is our constant aim to sustain this confidence of the Medical profession in our products.

Specify "MILLIKEN" in prescribing

JOHN T. MILLIKEN AND CO.

MANUFACTURING PHARMACISTS SINCE 1894

ST. LOUIS, U.S.A.